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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/649,774	08/28/2003	Franz-Xaver Bernhard	BERNHARD4	5858

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EXAMINER

GATES, ERIC ANDREW

ART UNIT PAPER NUMBER

3722

DATE MAILED: 12/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

DETAILED ACTION

Response to Amendment

1. This office action is in response to applicant's amendments filed on 7 October 2005 and 27 September 2005.

Claim Objections

2. Claims 1-6 are objected to because of the following informalities: In claim 1, line 3, the word "which" should be replaced with the word "with". Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 10-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. Claim 10 is rejected because it depends from canceled claim 7, thereby rendering it unclear what limitations are encompassed by the claim.
- b. The term "resilient" in claim 11 is used by the claim correctly to identify a spring or Belleville washer, but then refers to "an irreversibly or plastically deforming element". The accepted meaning of "resilient" is "returning freely to a

previous position, shape, or condition" (Webster's Online Dictionary), which is the opposite of an irreversibly or plastically deforming element. The use of the term to simultaneously claim opposite functions renders the claim indefinite.

Claim Rejections - 35 USC § 102/103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 11-15 and 17 are rejected under 35 U.S.C. 102(b) as anticipated by

Bolledi, et al. (EP 1 004 395 A2) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Bolledi in view of Selci (U.S. Patent 6,354,776).

6. Regarding claim 11, Bolledi discloses a spindle headstock that includes a motor-spindle unit 11 and spindle housing 12. Bolledi also discloses that the motor-spindle unit is axially movable therein (page 2, lines 38-48), and he discloses a resilient (as defined in the claim) member 14 that resists axial displacement of the motor-spindle unit into the spindle housing so that said resilient member holds the motor-spindle unit in an intended working position up to a predetermined axial force level, and that compress

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axially, plastically deforming, to thereby allow the motor-spindle unit to move when a predetermined force is reached (page 2, lines 61-65), and which are arranged between axially opposite faces of the housing 13 and the motor-spindle unit (see Figure 1).

7. Bolledi does not directly disclose that the motor shaft is adapted to serve as a spindle, but it appears that this is the case for his invention. However, in the alternative, it is well known in the art to use the output shaft of a motor as the spindle, to thereby receive associated tools, etc., as disclosed by Selci (see abstract). Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the motor-spindle unit of Bolledi with the motor shaft used as the spindle as taught by Selci in order to have a simplified motor-spindle unit.

8. Regarding claim 12, Bolledi discloses that the resilient member 14 comprises annular elements 15 and 16 encircling the motor-spindle unit 11, as shown in Figure 1.

9. Regarding claim 13, Bolledi discloses axially aligned holding screws 19, the head of said screws bearing against the resilient member 14, as shown in Figure 1.

10. Regarding claim 14, Bolledi discloses a switch, which is a closed-loop machine tool control unit (not shown, see page 3, lines 14-25), which is responsive on deformation of the resilient member upon breaking of the screws 19.

11. Regarding claim 15, Bolledi discloses a sensor means placed inside at least one of the screws 19 (page 3, lines 14-25), which operates after a relative axial movement between the motor-spindle unit 11 and the spindle housing 13, said sensor being adapted to cause operation of the switching means.

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12. Regarding claim 17, Bolledi discloses the switch is designed to cause operation of the machine tool to be stopped (page 3, lines 14-25).

Allowable Subject Matter

13. Claims 1-6 would be allowable if the above claim objections were corrected.

14. The following is an examiner's statement of reasons for allowance: Independent claim 1 sets forth a spindle head for a machine tool that includes a compressible member for resisting axial displacement of the drive motor into the spindle housing, a switch and sensor responsive on deformation of the compressible member, and a drive motor provided with a peripheral groove with the sensor fitting therein, and a radial displacement of the sensor caused by axial displacement of the drive motor causing operation of the switch.

15. The closest prior art of record is U.S. Patent 6,357,565 to Bolledi. Bolledi teaches the elements of claim 1 except for the peripheral groove on the drive motor as the location of the sensor. Bolledi uses a sensor means placed inside of screws 19, which are attached to the compressible members instead of the motor, and activation of the sensor is caused by breaking of the screws instead of a simple radial displacement of the sensor. Therefore, Bolledi does not anticipate the present invention as set forth in independent claim 1.

16. Additionally, there is no combinable teaching in the prior art of record that would reasonably motivate one having ordinary skill in the art to so modify the teachings of

Bolledi, and thus, for at least the foregoing reasoning, the prior art of record does not render obvious the present invention as set forth in independent claim 1.

17. Claim 10 would be allowable if it was dependent upon a non-canceled claim(s) from the allowable claim group 1-6.

18. Claim 16 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

19. Applicant's arguments filed on 7 October and 27 September 2005 have been fully considered but they are not persuasive in view of the changes made in the 7 October amendment. Applicant's modification to claim 11 in the 7 October amendment, adding "an irreversibly or plastically deforming element", is in direct opposition to the definition of a resilient member, which by definition requires the resilient member to return freely to its original shape once the deforming load is removed. An irreversibly or plastically deforming element will not return to its previous shape once the deforming load is removed, and this is how the Bolledi device performs its shock-absorbing function. For this and the reasons supplied above, the grounds of rejection are deemed proper.

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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15. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Conclusion

21. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Baron '547 teaches the use of Belleville washers and a position sensor that initiates a switch that stops the spindle upon deformation of the washers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric A. Gates whose telephone number is 571-272-5498. The examiner can normally be reached on Monday-Thursday 7:45-5:15 & alt Fridays 7:45-4:15.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Boyer Ashley can be reached on 571-272-4502. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

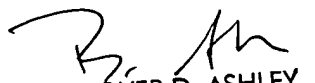
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EAG
29 November 2005

Eric A. Gates
Patent Examiner
Art Unit 3722



BOYER D. ASHLEY
PRIMARY EXAMINER